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ABSTRACT

A study was conducted to determine the perceptions of students and faculty members concerning an effective instructional climate in which satisfying and successful teaching and learning occur. A questionnaire was developed for use as a means of gaining such perceptions in terms of 70 possible attributes. Usable responses were received from 2,058 students and 325 faculty members located in 29 community junior colleges in 15 States of the North Central Region. Guides for the definition, assessment, and improvement of instructional climate are presented in the first section of the report, along with copies of an instructional climate self-appraisal form for instructors, an instructional climate student appraisal form, and an individual course evaluation form. A statistical analysis of the responses to each of the 70 attributes is presented in a second section of the report. (KM)

DEFINING, ASSESSING, AND IMPROVING COMMUNITY JUNIOR COLLEGE INSTRUCTIONAL CLIMATE

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A Research Based Report Prepared With the Support of the Council of North Central Community Junior Colleges and Made Available Through the Mountain-Plains Community College Leadership Program of the University of Colorado

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ASSESSMENT INSTRUMENTS AND TABLES

DEFINING, ASSESSING, AND IMPROVING COMMUNITY JUNIOR COLLEGE INSTRUCTIONAL CLIMATE

Section I

Instruction is the central thrust of the community junior college. Among the various services rendered by this institution, effective teaching which results in sound learning is highly regarded, both on campus and off. This study was undertaken in recognition of this condition and with the view of assisting faculty, students, and administrators in working with the instructional climate. Support for the project was provided by the Council of North Central Community Junior Colleges.

The Purposes of the Study

It was the intent of the study to provide a reservoir of practical ideas, based on research, which would be useful to community junior college personnel in defining, assessing, and improving the instructional climate, that is, in fostering those conditions most central to effective teaching and learning. The research details of the study, therefore, are cited only as they have significance to this purpose. Every effort has been made to make the report practical, so that the data might be adapted and used as the readers see fit.

Brief Statement of Design

This study sought to determine the perceptions of students and faculty members concerning an effective instructional climate in which satisfying and successful teaching and learning occur. A questionnaire, modified from an earlier project, was used as a means of gaining such perceptions in terms of 70 possible attributes, each of which appears in Table I. Respondents were asked to indicate one of the following responses for each attribute:

It contributes very significantly to an effective instructional climate. (5)

It contributes significantly to an effective instructional climate. (4)

It has no significant positive or negative influence on instructional climate. (3)

It detracts significantly from an effective instructional climate. (2)

It detracts very significantly from an effective instructional climate. (1)

The figures in parentheses represent the numerical values used in statistical treatment of responses.

Usable responses were received from 2,058 students and 325 faculty members located in 29 community junior colleges in 15 states of the North Central Region. These institutions were representative of small, intermediate, and large colleges and were situated in different sizes and types of communities. In short, the stratified sample of participants was generally representative of the total population included in the member institutions of the Council of North Central Community Junior Colleges.

Organization of the Report

Since the practical application of ideas is of primary concern, the definition, assessment and improvement of instructional climate follow immediately in Section I. The basic research data are presented later in Section II of the report.

The Need for Attention to Instructional Climate

Few administrators and teachers need to be convinced of the importance of instructional climate. For those who need convincing, and for those who would like support in convincing others, reference should be made to page 39 of this report, on which student satisfaction-dissatisfaction with such climate is detailed. Suffice it to state at this point that less than half of the responding community junior college students indicated that they were "satisfied" or "highly satisfied" with the overall instructional climate of the institutions they were attending. In the same institutions, more than 70 percent of the faculty voiced satisfaction or a high level of satisfaction.

This difference in satisfaction between faculty members and students points up the desirability, if not the necessity, for individual institutions to study their local conditions. The importance attached by both students and faculty to instructional management (as reported later herein) reveals common ground on which such investigation may be undertaken.

Defining an Effective Instructional Climate

The data in Tables I and II provide a basis for defining an effective instructional climate in terms of student and faculty perceptions. Reference to Table I, for example, will yield a list of attributes in rank order by student means, together with percentage distributions of student and faculty responses. In Table II, attributes have been clustered so that those pertaining to some larger aspects of instructional climate are grouped together with their mean scores and factor loadings. Both sets of figures are useful in selecting the more valuable statements for defining characteristics of an effective instructional climate.

In defining an instructional climate, a single instructor, the members of a department or division, or a total institutional faculty may be involved, along with students in the process. The definition which follows is offered as an illustration in which attention has been given to both student and faculty perceptions with the view of offering some summary statements having broad applicability throughout a comprehensive community junior college. Accordingly, the instructional climate of such an institution might be characterized as follows:

1. As dynamic and personable people, the faculty members are sincerely interested in students, whom they respect as individuals, and are enthusiastic about their courses.

2. Knowledgeable of their special fields, faculty members prepare thoroughly for their courses, and they know how to teach as well as what to teach.

3. The courses offered are themselves credible, meaningful, relevant, and useful; they are well organized and utilize well-written, interesting, and appropriate books and other materials which are provided in ample quantity and which are readily available to students.

4. Encouraged to work independently, the students assume much personal responsibility for their own learning and are actively involved in the instructional process, as a result of which they are learning important things and attaining personal objectives.

5. Communication between students and faculty is excellent; the instructors are easy to understand and they realize when students are bored or confused; they present varying points of view and are careful and precise in answering questions.

6. In demonstrating an interesting style of classroom presentation, the instructors utilize a well-balanced variety of instructional techniques, and they coordinate well the lectures, recitations, laboratory experiences, and other related teaching-learning endeavor.

7. Examinations and other requirements are worthwhile and reasonable; written assignments and tests are returned promptly and discussed; the instructors regularly inform students of their performance with the interest of reinforcing learning.

8. Supplemental assistance, such as academic and related counseling, remedial or developmental instruction in basic skills, and instructors' individual assistance, is readily available as needed.

9. Instructors regularly seek feedback from students about their courses and their teaching, with the view of fostering an optimal level of successful and satisfying teaching and learning.

This summary definition provides only an example of what may be done by faculty and/or students in selecting what they consider particularly appropriate for their institution on the basis of the research data in Tables I and II. It stresses those attributes having high mean scores and relatively high factor loadings. Checking the definition against learning propositions presented later will reveal also that learning theory has not been neglected. For reasons peculiar to an institution, a division, or an individual instructor, a different definition or one with a varied emphasis might be more suitable than the illustration given.

In defining overall institutional instructional climate, faculty members, of course, may choose to work alone. If they are hesitant about student involvement or insecure about instructional matters, such a singular approach may be desirable, at least initially. On the other hand, inclusion of students in the process may serve to clarify the roles of both teachers and learners and lead to definitions which are well understood by all concerned. Student-faculty planning of this type is especially useful at the individual course level where it provides a basis for the subsequent evaluation of instruction.

For example, one of the attributes receiving high ratings is as follows:

Instructors know how to teach as well as what to teach.

This statement may well vary in interpretation among both students and faculty. Through a process of student-instructor discussion, the interpretation may be clarified and reasonable agreement reached on conditions which are indicative of knowing how to teach as well as what to teach. Quite possibly, some of the more specific statements in Tables I and II, dealing with classroom presentation, varying points of view, examinations, and so forth, could be brought into such a discussion in terms of interrelationships.

Having developed a summary definition of instructional climate, such as the one presented here, student-instructor discussion might be directed to interpretation and the establishment of criteria for assessment. As an illustration, when it is proposed that courses be credible, meaningful, relevant, and useful, just what does this mean? Do instructors and students realize that meaning lies more in the people involved than in the subject matter? Can and will they agree that relevance is a matter of relationship rather than a fixed property of a given course? Will they consider relevance in terms of past as well as present and future time frames? These are the kinds of questions which should be raised, and the answers will bear directly on the activity and responsibility of both students and instructors in the instructional process.

Learning Theory and Instructional Climate. The faculty and student discussions previously recommended provide opportunity for the consideration of learning theory as it may be appropriate to the definition of instructional climate and the subsequent assessment of such climate. This theory and other related material dealing with teaching and learning may be found among the literature currently available. As an illustration, the following learning propositions represent an attempt to present useful guidelines to instruction based on such theory and stated in simple terms.

More effective and efficient learning will occur in community junior colleges when:[1]

1. Through attention to cognitive structure and learning style of individuals, instructors assist students in anchoring new learning to old, in developing interrelationships which foster the progressive differentiation and synthesis of experience, and in utilizing the logical structure of a discipline within a personal psychological framework.

2. Through attention to the emotional and scholastic readiness and receptivity of individuals, instructors assist students in developing an expanding and continually reconstituting experiential base for learning and in exercising a willing, critical, and reflective receptivity to new ideas.

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[1] Modified slightly from: Stephen Romine, "Some Learning Propositions for Community College Instruction," The North Central Association Quarterly, Vol. XLVII, No. 3, Winter, 1973, pp. 295-300.

3. Through attention to interest, effort, effect, and motivation, instructors assist students in attaining and maintaining a high level of personal involvement in the teaching/learning process and an intelligent concern for outcomes and implications.

4. Through attention to feedback and reinforcement, instructors assist students in the self-appraisal of performance, in strengthening correct responses, in early correction of errors, and in profiting from their mistakes.

5. Through attention to variability and verbalization, instructors assist students in experiencing learning in varying contexts and situations and in internalizing what they learn through appropriate oral and written verbalization.

6. Through attention to spaced learning, respite or rest, and cumulative review and reorganization, instructors assist students in using their time and spending their energy wisely in class and out.

7. Through attention to learning attitudes, habits and skills, instructors assist students in developing self-reliance and in becoming increasingly proficient in and responsible for their own learning.

To the extent that the definition developed for instructional climate brings into congruence the theories of learning and the perceptions of students and faculty, as reported here, this definition will be more likely to promote effective and efficient learning. Not all students nor all faculty members necessarily accept the implications of these learning propositions, which condition may require considerable patient leadership and understanding on the part of those working with them to generate a statement on which agreement can be attained. The same challenge, of course, exists with respect to student and faculty perceptions alone, as was noted earlier.

Individual and Divisional Definition. Beyond a broad statement of conditions having general applicability throughout a community junior college, separate departments and individual faculty members may wish to add considerations having special worth to them. These considerations may relate to the attainment of given outcomes peculiar to a course or they may specify instructional behavior believed to have special merit. In short, there should be room in an institution for flexibility which will enable individuals and groups to develop definitions well suited to differing conditions. Some illustrations of ideas appropriate to various fields are given later under assessment in Section I.

Definitions such as proposed here are useful in inducting new faculty members and in moving toward a type of internal accountability which considers qualitative as well as quantitative factors. Individual instructors may assess the expectations which students in their classes have of them. In turn, they may spell out what is expected of students. A sort of psychological contract may result from such cooperative attention to instructional climate, as a result of which, hopefully, more effective and efficient teaching and learning will be attained.

Assessing an Instructional Climate

Assessment or appraisal may follow the definition of an effective instructional climate, the latter first providing bases upon which to make judgments. Self-appraisal, assessment by students, and trained observer judgment may be employed singly or in combination to accomplish the appraisal. Although institution-wide rating forms may be desired, the better approach (at least initially) may be to work with individuals and/or at the departmental or divisional level. Higher motivation to define and assess, greater confidence in the forms developed and less insecurity in their use are apt to accompany developments which respect personal integrity and preserve a reasonable measure of responsible departmental or individual autonomy. In addition, appraisal forms developed for departments or classes may have greater diagnostic value than forms for institution-wide application.

Reference may be made again to Tables I and II. Or if those who now seek to develop an assessment instrument have already defined an effective instructional climate, they may begin with their definition and the identifiable attributes contained therein. As an illustration, the self-rating form which appears below was developed from the definition of instructional climate given earlier in this report.

INSTRUCTIONAL CLIMATE SELF-APPRAISAL FORM

Directions: Based on earlier definitions, the individual instructor should assess the instructional climate of this course in terms of each of the sixteen statements which appear below, using the following scale in indicating the degree to which he believes each statement was characteristic of the course:

5	To a very high degree	2	To a limited degree
4	To a high degree	1	Not at all
3	To some degree	N/A	Statement not applicable

1. As the instructor of this course, I demonstrated a sincere interest in my students and respected them as individuals. _____

2. As the instructor, I was enthusiastic about this course. _____

3. I prepared myself thoroughly to serve as the instructor of this course. _____

4. This course was credible, meaningful, relevant, and useful to students. _____

5. This course was well organized with clearly specified objectives, assignments, requirements, and related aids. _____

6. The students in this course assumed much personal responsibility for their own learning. _____

7. The students in this course were actively involved; they were not merely listeners. _____

8. The students in this course attained some of the personal objectives which they had in mind in selecting the course. _____

9. The students in this course learned some important things.† _____

10. The presentations and explanations which I made as the instructor were clear and easy to follow and understand. _____

11. As the instructor, I was careful and precise in answering questions. _____

12. I realized when students in this course were bored or confused. _____

13. Library and other materials pertinent to this course were provided in sufficient quantity and were readily available to students. _____

14. Examinations and other requirements of this course were worthwhile and reasonable. _____

15. As their instructor, I regularly informed students of their progress and performance in this course and reinforced their learning. _____

16. As the instructor of this course, I demonstrated that I know how to teach as well as what to teach. _____

†If desired, the outcomes sought in the course may be stated individually as items to which a response is to be made.

It will be noted that the statements on the assessment form are more specific than the collective summary statements employed in defining instructional climate. Such specificity fosters greater accuracy in the appraisal process. The sixteen statements on the assessment form cover most but not all of the points made in the definition. Depending upon the purposes sought, a greater or a lesser number of appraisal statements may be employed. Emphasis may be placed where it is deemed to be desirable by those concerned—students, faculty, or both. The wording may be shortened and/or simplified, or lengthy explanation may be employed, as believed to be appropriate.

For the use of students, a similar assessment form may be developed such that self-ratings may be compared with those given by students. Still another adaptation is possible to yield a form on which observers may note their perceptions. If classroom visitation is employed with the use of such a form, it is then possible for instructors to review their self-perceptions in the light of how students and observers see them. The form which follows illustrates a companion instrument for use by students in the same course for which the self-appraisal form was developed.

INSTRUCTIONAL CLIMATE STUDENT APPRAISAL FORM

Directions: Based on earlier definitions, please rate the instructional climate of this course in terms of each of the sixteen statements which appear below, using the following scale in indicating the degree to which each statement was characteristic of the course:

5	To a very high degree	2	To a limited degree
4	To a high degree	1	Not at all
3	To some degree	N/A	Statement not applicable

1. The instructor demonstrated a sincere interest in the students of this course and respected them as individuals. _____

2. The instructor demonstrated enthusiasm for the course. _____

3. The instructor prepared well to conduct this course. _____

4. This course was credible, meaningful, relevant, and useful. _____

5. This course was well organized with clearly specified objectives, assignments, requirements, and related aids. _____

6. Students in this course assumed much personal responsibility for their own learning. _____

7. Students in this course were actively involved; they were not merely listeners. _____

8. Students in this course attained some of the personal objectives which they had in mind in selecting the course. _____

9. Students learned some important things in this course.† _____

10. Presentations and explanations made by the instructor were clear and easy to follow and understand. _____

11. The instructor was careful and precise in answering questions. _____

12. The instructor realized when students in this course were bored or confused. _____

13. Library and other materials pertinent to this course were provided in sufficient quantity and were readily available to students. _____

14. Examinations and other requirements of this course were worthwhile and reasonable. _____

15. The instructor regularly informed students of their progress and performance in this course; he/she reinforced student learning. _____

16. The instructor demonstrated that he/she knew <u>how</u> to teach as well as <u>what</u> to teach. _____

†If desired, the outcomes sought in the course may be stated individually as items to which a response is to be made.

This illustration in no way exhausts the possibilities. Student and faculty ingenuity may result in various approaches to the definition and assessment of instructional climate. For example, if a cooperatively developed definition spells out a number of student obligations, such as reading a specified number of books from a given list, completing a given number of experiments or modules in a course, and the like, each of these may be noted on the assessment form. Focus through assessment may emphasize instructor performance or it may include student obligations and performance as well. The latter is very significant in terms of what is known about how people learn.

Personal Integrity and Flexibility. At the beginning of a course an instructor may present to students for their reaction what he considers to be important attributes of an instructional climate, that is, the conditions he will strive to maintain in the course. Their responses may enable him to modify his instructional strategy without loss of personal integrity, particularly if he has some "instructional flex." At least, these responses yield an idea of the values which students attach to course features which he has proposed. Such values should be useful later in interpreting the responses made by students on instructional climate appraisal forms. This approach is an adaptation of that utilized in the research basic to this report.

This activity also may spell out for students what is expected of them in the teaching/learning process. Some of them may need to alter their customary behavior as a means to increase their learning. The significance attached to instructional management does not negate the importance of student activity and responsibility to effective learning.

As a final example of an instructional climate appraisal form, the following instrument has been employed by one of the investigators with one of his graduate courses. It reflects many of the ideas which have been offered in previous discussion and illustrates how an individual may structure an assessment instrument to suit particular situations.

SPECIAL INDIVIDUAL COURSE EVALUATION FORM

This course (Education 657-3) has been intended to serve several major purposes for students in higher education. Please read the evaluation form completely before beginning to fill it out. Then start with Section I and respond to all of the items, which relate to the purposes sought and conditions related to their attainment. Use the reverse of the page for additional comments, including suggestions for improvement.

Section I: Two separate types of response are sought for each item in this section, for which directions are given below. Please make responses in Column B independent of those you make in Column A.

A. In Column A indicate the importance you personally attach to the substance of each question as an attribute or condition characteristic of a desirable teaching-learning climate; use the following scale:

4 Very Important	2 Not Very Important
3 Important	1 Very Unimportant

B. In Column B, and independent of your answers in Column A, indicate the degree to which you believe the substance of each question was characteristic of this course; use the scale which follows:

4 Very High Degree	2 Low Degree
3 High Degree	1 Very Low Degree

	A	B
1. To what degree has this course enabled you to satisfy or attain the major interests, needs or purposes which you identified or formulated for yourself in pursuing the course?	____	____
2. To what degree has this course helped you to learn things that seem to be important in understanding the field of higher education and in working effectively therein?	____	____
3. To what degree has this course helped you to apply, clarify, examine, strengthen and/or modify your own attitudes and values as they apply to decision making in higher education?	____	____
4. To what degree has the class exposure to a number of issues or problems served to enlarge your perspective of higher education?	____	____
5. To what degree have your special projects served to deepen your understanding of the issues or problems you investigated?	____	____
6. To what degree has your investigation of issues or problems helped you to sharpen your skills of inquiry, analysis, synthesis, application, evaluation and expression?	____	____
7. To what degree has the class discussion been stimulating and given you a sense of worthwhile and satisfying participation?	____	____
8. To what degree has the behavior of the instructor:		
a. Reflected an adequate background of knowledge, experience and preparation for the course?	____	____
b. Reflected enthusiasm for the course and his role therein?	____	____
c. Reflected a personal interest in and respect for you as an individual?	____	____
d. Contributed to a teaching-learning climate, in class and out, that has been encouraging to you as a learner?	____	____

	A	B
e. Provided the time and counsel you desired on class and other matters of importance to you?	_____	_____

Section II: Please choose one of the following responses for each of the three items in this section:

4	Highly Satisfied	2	Dissatisfied
3	Satisfied	1	Highly Dissatisfied

1. How do you feel in general about this course and its value as an educational experience? _____

2. How do you feel in general about the instructor's role and performance in this course? _____

3. How do you feel in general about your own role and performance in this course? _____

DON'T FORGET!! YOUR COMMENTS ARE INVITED.

This assessment form combines two considerations, each of which has already been discussed. It is particularly applicable to instructional situations of short duration, for example, two to eight weeks. In Column A, attention is directed to student perceptions of significance, that is, the importance which they attach to each of the attributes. In Column B, the students make their assessment in terms of what actually occurred during the duration of the course. By studying the responses in both Columns A and B, the instructor may ascertain how well he has done in terms of the desired and realized characteristics which the students perceive to be especially significant to this course. This process will enable the instructor to determine, first, if the conditions he regards as important are so regarded by the students. Second, it will provide an indication of how well the conditions were met. Both kinds of response may help in subsequent efforts to create an instructional climate more likely to stimulate or motivate students to effective and satisfying learning.

Individualizing Assessment Forms. On an institutional-wide basis it may be desirable to employ a standard assessment form which permits comparisons. If this practice is employed, opportunity to add items of special interest to given departments or individuals is important and will increase faculty participation and the value of such participation. Listed below are a few illustrations of items that may have special value to some departments or instructors. They may be used with the same five-point scale suggested for the Instructional Climate Student Appraisal Form presented earlier.

History and Social Studies

1. This course has helped students to understand current societal conditions in the light of underlying historical developments.

2. This course in economics has presented background which will be useful in facing problems of current tax structure and needed changes.

3. This course has provided opportunity and encouragement to read widely among topics and materials of special interest to individual students.

4. The lectures, recitations, written papers, and examinations in this course were all well coordinated.

Literature

1. This course has increased my interest in and enjoyment of poetry.

2. The enthusiasm of the instructor for the varied literary selections used in this course has kindled and/or supported my interest in reading.

3. The instructors' handling of students' questions in this course has contributed much to a better understanding of literary analysis and its use.

Mathematics

1. This course in basic mathematics presented processes and skills which I see as being useful to me personally.

2. The instructor made wide application of mathematical graphs in portraying data in various fields of endeavor.

3. Problem-solving was utilized in this course with regular and prompt feedback on our written work.

Science

1. Lectures and laboratory work were well coordinated in this course.

2. Frequent summarization of major points helped students in the course to focus on ideas deemed especially significant by the instructor.

3. The many practical applications of science made the course credible, meaningful and useful.

4. Basic mathematical processes were reviewed by the instructor as they were needed in this course.

5. As a result of this course I have a better understanding of my own dietary needs.

Trade and Industry Lab

1. Theory and practice were interrelated in meaningful ways in this course.

2. The use of skilled craftsmen, possible future employers and union officials as resource personnel added reality to the course.

3. The personal interest of the instructor in the individual progress of each student served to motivate effort and encourage learning.

4. The safety measures insisted upon by the instructor were made clear and understandable.

5. Careful demonstrations and explanation by the instructor supplemented and made more understandable the diagrams and other written materials used in the course.

Business

1. This course provided a good understanding of the business world in relation to man and his everyday living.

2. Case studies were well employed in this course as a means of applying business law.

3. The practical problems employed in examinations made the testing realistic and meaningful as an exercise.

As suggested, only a few illustrations have been presented. In developing assessment instruments, instructors may be quite specific in terms of given courses. They may add their own items to a form which is institution-wide in its application, or they may modify items having general applicability to fit their own courses. Examples of these things may be observed here.

Wording may be suited to the individual course also. Clarity is extremely important, of course, for reasonably uniform interpretation by students is basic to the comparability and compilation of responses. Too much variation in style among the items making up the assessment instrument may be confusing. The student-faculty discussions recommended earlier in defining the instructional climate may be helpful in the development of the instrument and in its subsequent use.

Maximizing Individual Instructional Talents. Reference has been made to personal integrity and the importance of maintaining it. Some instructors are better in utilizing certain instructional techniques, while others perform differently. Such individual differences merit recognition. As mentioned earlier, instructional flex is useful, but on every faculty there are apt to be some faculty members whose instructional repertoire is limited, but who do some things very well. Team teaching provides one way in which individual differences may be given the attention deserved such that groups of instructors may have a desirable impact, the work of individual team members being complementary. In other words, team teaching may effectively combine individual instructor strengths.

In courses which involve a team of two or more instructors, the assessment process is more complicated. An overall assessment which combines impressions of each of the several instructors may be utilized, the students also being asked to comment on individual instructors as they see fit. A different approach is to evaluate each instructor of the team separately, with or without more general appraisal of the total class instructional situation.

Individual strengths and weaknesses also require recognition in classrooms where only one instructor performs. Assisting such persons to capitalize on strengths and improve weaknesses leads back to the proposition of instructional flex. Older and more experienced teachers may require considerable assistance in adapting to newer approaches. Some of them may be unable to modify their instructional behavior. Care

is needed in passing judgment on these instructors, not a few of whom have an impact on students which is recognized as important only after several years have passed.

Using the Data to Improve Instructional Climate

Faculty Recruitment. The discussion directed to the definition and assessment of instructional climate has already alluded to improvement in several specific ways. One of the most fundamental steps that can be taken to improve instruction is that of recruiting and employing promising faculty members. Much greater attention should be given to this process by community junior colleges than is usually the case. In developing the job descriptions to be used for employment purposes, a well-defined instructional climate is essential, for it provides specific descriptions of the type of person the institution should seek.

Induction and Career Development. In similar fashion, the definition of instructional climate is useful in inducting new faculty members who have been employed. Within its limits, such a description spells out the nature of faculty performance expected; it defines roles and provides some criteria for the assessment of performance. These criteria will be increasingly useful as both faculty and students discuss and agree on the evidence which indicates that they are being met. Student responsibilities and roles are also very important; indeed, they share accountability with instructors.

Frequently, new instructors have heavier assignments than is desirable for their initiation to teaching. A lighter load, plus a program of induction, offers a means of assuring a more effective beginning for these neophytes. Sometimes it is possible to team them with an excellent senior faculty member, particularly one who relates well with new instructors and is interested in helping them to develop. The nature of the instructional climate, individual introspection, cooperative course planning, joint teaching and observation experiences and other fruitful endeavor may be furthered by this formal relationship of inexperienced and experienced faculty members. The long-range payoff is apt to far outweigh the initial costs.

Whatever the means of assessment employed, these criteria which define an effective instructional climate also suggest specific areas wherein improvement may be sought by individual instructors. The results for a department or an institution may also indicate wherein improvement on a broad scale is needed. Inservice education or faculty development programs for well-established personnel may be instituted to foster improvement in line with effective instruction which results in successful learning. Attention to student outcomes and learning gains may also serve to validate concern for instructional climate.

The matching of student expectations and institutional expectations is frequently discussed in educational literature. A well-stated definition of instructional climate is useful in communicating to prospective students the nature of the teaching-learning environment which the community junior college seeks to maintain and the role of students therein. This definition may also be useful to secondary and elementary schools in the sense that some of the expectations of higher institutions will not be met unless earlier schooling helps students to develop appropriate study skills, attitudes and habits. For example, personal responsibility for learning and the ability and desire to study independently are not well-developed in college-age students unless earlier schooling has contributed to these conditions. This area is one which the institutional articulation efforts should not neglect. The conditions discussed here

also relate to institutional accountability in a manner which is educationally sound and probably reassuring to taxpayers.

Competency-Based Teacher Education. Definitions of instructional climate normally include attitudes, understandings, and skills associated with effective teaching. Such description may be useful in conveying to teacher preparation institutions the kinds of instructors which community junior colleges need and want. Furthermore, cooperation in the selection and education of prospective community junior college personnel may relate to the requirements which instructional climate definitions include. Cooperative inservice education or faculty development programs involving senior colleges and advanced degree programs may also find direction in such definitions. There is definitely a need for graduate study which has demonstrable value on the job.

Administration and Instructional Climate. Administrative provisions also relate to the improvement of instructional climate. Reference to Table I suggests attention to such matters as the provision of library and other instructional materials, the adequacy of classrooms and laboratories, the provision of remedial and developmental programs, and other conditions judged by students and/or faculty to have a bearing on such climate. Innovations in scheduling, marking and grading, teaching for mastery, and the like require administrative support, if not administrative stimulation.

With the growing urgency of accountability, pressures are developing to impose merit rating and other evaluative schemes upon community junior college personnel. Administrative leadership is crucial in warding off unreasonable demands and in mounting strong internal programs of accountability, perhaps including merit rating, which will serve well all concerned.

The perceptions of students and faculty as reported here, or as determined separately by an individual institution, should be helpful in serving accountability purposes. For example, their use in defining responsible roles for both students and instructors reflects an important recognition of stewardship. The development of an assessment program based on such a definition and used to foster improvement provides additional evidence of accountability. If retention and promotion of faculty, tenure and salary increases are associated with performance as assessed in terms of definite criteria, this endeavor reflects still another determination to achieve and reward excellence, both steps of which are inherent in sound accountability as typically defined.

In Conclusion

This study provides perceptions of students and faculty about the instructional climate in which they believe effective teaching and learning move forward. As such, the study suggests conditions which will foster student and faculty satisfaction. Both considerations, that is, effectiveness and satisfaction, are related to outcomes in ways not yet clearly and definitively established. Community junior colleges which undertake to deal with climate as discussed herein may also want to direct attention to the appraisal of outcomes and the relationship of outcomes, input and process.

Section II which follows provides in some detail the basic data upon which Section I is predicated. Here, again, understandable simplicity has been sought such that persons not experienced in statistics would not become completely lost. Some over-simplification will perhaps be apparent to those well-versed in statistical

procedures, but it is believed that this will not negate the practical suggestions which appear earlier in Section I.

For those who wish to understand more completely the rationale for recommendations in Section I, Section II should be read carefully. The latter section also provides additional insight into the nature and problems of defining, assessing, and improving instructional climate. Not all the answers are provided herein, indeed, not all the questions are raised. But it is believed that there are challenging ideas and helpful suggestions presented which will stimulate and aid concerned community junior college personnel in doing an excellent and satisfying job.

Section II

Students and Faculty Rate the Attributes

The data in Table I provide an overall response of students and faculty to each of the 70 possible attributes of an effective instructional climate. Attributes worded negatively on the questionnaire were reworded positively and responses reversed so that compatibility and comparability extend across all items in the table. From this table one may gain a rather complete idea of the perceptions of students and faculty about the teaching-learning conditions descriptive of such a climate. Although 2,058 students and 325 faculty members responded, not every respondent answered every item, but the differences were extremely small.

Although the table is largely self-explanatory and may be used as a reference point by faculty and others working with instructional climate, a few comments may be helpful. It should be noted that some attributes are more widely applicable to various courses than are others. Some attributes are more central to the classroom and to the instructor; others pertain to administrative policy, such as class size or the provision of given conditions which require administrative sanction and support.

The Distribution of Responses. There was a wide distribution of both student and faculty responses across the 5-point scale as applied to many attributes. The range of mean scores reported by students was from 4.539 to 1.984; the range for the faculty was from 4.735 to 1.832. On 54 attributes the faculty mean score was higher than that of the students. While students and faculty were in agreement that each of 59 attributes made at least a "significant contribution" (mean score of more than 3.5) to an effective instructional climate, they differed to a statistically significant degree (.05 or higher level of confidence) on the value of attributes in 68 cases. These differences do not invalidate the perceptions of either group of respondents, but they (and the wide distribution of responses among both groups) suggest that no single instructional climate will satisfy everyone equally well. It is important that this condition not be forgotten by students, by faculty, or by administrative staff.

The higher mean scores for faculty indicate that this group generally attached somewhat greater significance to the attributes than did the students. This condition, plus the general overall agreement that 59 attributes were "significant" contributors, should be encouraging to those who support the idea that students and faculty do agree reasonably well on important characteristics of what makes a desirable teaching-learning situation.

The Primary Importance of the Instructor. Students generally attached greater significance to instructors and what they do than they did to themselves and their own role in the instructional process. It might be wise to question students about this situation to determine what reasons may exist. In any event, student responsibility for learning and active involvement are important and should not be totally neglec ed simply because students do not give them as high a rating as concern for learning theory might suggest. Care should be taken that instructors do not contribute to he dependency of students upon teachers.

TABLE I

THE SIGNIFICANCE OF SEVENTY POSSIBLE ATTRIBUTES OF INSTRUCTIONAL CLIMATE AS PERCEIVED BY COMMUNITY JUNIOR COLLEGE STUDENTS AND FACULTY

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
1	1*	Instructors are sincerely interested in students and respect them as individuals. (.001)[4]	S[3]	.8	1.2	5.4	28.8	63.9
			F	.0	.0	.9	24.6	74.5
2	5*	Instructors know <u>how</u> to teach as well as <u>what</u> to teach. (.001)	S	1.4	2.1	5.7	25.7	65.1
			F	.0	.0	1.9	31.8	66.4
3	7*	Instructors know their field of specialization very well. (.05)	S	.4	2.2	5.0	31.2	61.2
			F	.0	.3	3.1	36.9	59.7
4*	23	Library and other materials are provided in sufficient quantities and are readily available to students. (.001)	S	1.3	2.0	5.4	32.1	59.2
			F	.0	1.2	4.6	44.9	49.2
5	2*	Instructors are well-prepared for their classes. (.001)	S	.7	1.9	4.6	36.7	56.1
			F	.0	.3	.6	25.0	74.1
6	15*	Courses are credible, meaningful, relevant and useful. (.02)	S	.7	2.2	7.4	30.4	59.3
			F	.0	.6	6.5	37.8	55.1
7	12*	Students are learning something important in the courses they take. (.05)	S	1.3	1.3	8.1	31.6	57.8
			F	.0	.3	6.2	37.9	55.6
8	3*	Instructors are enthusiastic about their courses. (.001)	S	1.0	1.8	6.3	35.1	55.8
			F	.0	.3	.6	29.5	69.5

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

[2] 5 = contributes very significantly
4 = contributes significantly
3 = has no significant positive or negative influence
2 = detracts significantly
1 = detracts very significantly

[3] S = student distributions. F = faculty distributions.

[4] Level of confidence indicated when .05 or higher for differences in distribution of responses between students and faculty.

TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
9*	30	Special academic and related counseling are available to students who need it. (.01)[4]	S[3]	.9	1.5	6.9	36.6	54.0
			F	.0	1.2	8.6	44.0	46.2
10	4*	Instructors are dynamic and energetic. (.001)	S	.5	1.0	5.5	43.4	49.6
			F	.0	.0	2.5	29.2	68.3
11	18*	Instructors speak clearly and can easily be heard. (.001)	S	.8	2.0	6.6	37.4	53.2
			F	.0	.0	3.1	47.4	49.4
12	6*	Instructors explain clearly and are easy to understand and follow. (.001)	S	1.4	3.0	7.5	32.7	55.5
			F	.0	.6	1.2	39.4	58.8
13	26*	Students are attaining some of the personal objectives which they had in mind in selecting the courses they take. (.001)	S	.8	2.5	8.4	37.0	51.3
			F	.0	.3	6.2	49.7	43.8
14	19*	Instructors present other points of view, as well as their own. (.001)	S	.8	2.2	8.0	39.3	49.6
			F	.0	.3	3.1	46.9	49.7
15	20*	A well-balanced variety of instructional techniques is used by instructors including such things as audio-visual aids, case studies, field trips, and resource personnel as appropriate to the given course. (.001)	S	1.7	2.0	8.8	36.4	51.0
			F	.3	.3	4.6	44.3	50.5

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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[4] Level of confidence indicated when .05 or higher for differences in distribution of responses between students and faculty.

TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
16	13*	Classroom and laboratories are adequate for instruction, well-equipped, and free of outside distractions. (.01)[4]	S[3]	1.4	3.3	7.4	37.6	50.4
			F	.9	.6	3.4	38.9	56.2
17	25*	Examinations and other written assignments are returned promptly to students and discussed with them. (.001)	S	1.9	2.8	9.2	34.8	51.3
			F	.0	.9	4.3	49.8	44.9
18	29*	Instructors are personable and have a sense of humor. (.001)	S	1.1	1.3	8.9	43.6	45.2
			F	.0	.0	5.2	54.5	40.3
19	32*	Instructors have an interesting style of classroom presentation. (.001)	S	1.2	2.7	9.1	40.0	46.9
			F	.0	.6	7.1	51.7	40.6
20	22*	Courses utilize well-written, appropriate, and interesting books and related reference material. (.001)	S	.7	3.1	8.9	41.6	45.7
			F	.0	.6	4.0	48.0	47.4
21*	48	Lounges or other suitable, informal settings are available for small groups, both for class-related and for purely social purposes. (.001)	S	2.0	1.5	12.4	35.2	48.9
			F	.9	1.2	13.3	58.2	26.3
22	28*	Instructors are readily available to students out-of-class.	S	1.5	2.7	8.4	41.7	45.7
			F	.0	1.2	7.1	46.3	45.4

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
23*	46	Instructors maintain a friendly, informal classroom atmosphere. (.001)[4]	S[3]	.8	3.5	10.2	39.2	46.3
			F	.3	1.9	14.8	52.5	30.6
24	11*	Courses are well-organized with clearly specified objectives, assignments, requirements, and related learning aids. (.001)	S	1.3	3.0	10.3	39.1	46.3
			F	.0	.3	4.3	40.6	54.8
25	14*	Instructors realize when students are bored or confused. (.001)	S	1.8	4.1	9.9	34.8	49.4
			F	.0	.3	4.0	42.8	52.9
26*	51	Many elective courses are available to students. (.001)	S	1.4	2.5	9.0	43.2	43.8
			F	.3	1.2	13.5	64.0	20.9
27	8*	Remedial or developmental instruction in basic skills, such as reading, writing, mathematics, and speech, is readily available to those needing it. (.001)	S	1.1	2.6	11.3	40.0	45.0
			F	.0	.0	4.3	37.7	58.0
28	16*	Lectures, laboratory experiences, recitations, readings, and related teaching-learning endeavor are well-coordinated. (.001)	S	.7	2.4	9.5	47.4	40.0
			F	.0	.0	2.8	47.4	49.8
29	24*	Marking and grading are clearly explained and accomplished fairly and impartially. (.01)	S	2.1	3.6	10.4	37.2	46.7
			F	.6	1.9	5.9	39.8	51.9

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
30	40*	Classroom procedures include much free and open discussion. (.01)[4]	S[3]	1.4	3.4	13.0	39.2	42.9
			F	.3	1.5	13.0	48.1	37.0
31	10*	Instructors regularly inform students of their progress and performance, and they reinforce student learning. (.001)	S	1.8	3.5	11.1	43.4	40.2
			F	.0	.0	4.6	40.9	54.5
32	34*	Instructors are careful and precise in answering questions. (.01)	S	.9	3.0	12.0	46.6	37.4
			F	.0	1.2	7.1	52.6	39.1
33*	47	Classes usually enroll not more than 35-40 students.	S	2.6	5.3	12.0	34.8	45.3
			F	3.4	6.5	9.9	37.8	42.4
34	17*	Students are actively involved in the instructional process; they are not merely listeners. (.001)	S	1.5	3.7	13.0	42.3	39.5
			F	.0	.3	3.7	44.6	51.4
35	45*	Instructors clarify thinking by giving reasons for their questions. (.001)	S	.9	2.8	12.7	49.3	34.3
			F	.3	.0	11.7	60.8	27.2
36	39*	Individual tutorial assistance is readily available to those who need it. (.001)	S	2.0	3.7	12.5	43.4	38.2
			F	.6	.6	10.2	54.2	34.5
37	35*	Lectures add to and complement textbooks and references. (.01)	S	1.8	3.7	12.6	46.5	35.4
			F	.3	.9	9.5	49.5	39.7

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
38	36*	Instructors utilize concepts and facts from related fields. (.001)	S[3]	.6	2.4	12.1	56.4	28.4
			F	.0	.0	4.9	64.6	30.5
39	33*	Students assume much personal responsibility for their learning. (.001)	S	.9	4.4	14.0	47.6	33.2
			F	.3	1.8	4.6	52.9	40.3
40	21*	Instructors' presentations and questions are thought-provoking. (.001)	S	2.1	3.7	14.3	45.4	34.5
			F	.0	.9	4.3	45.8	48.9
41	37*	Instructors frequently summarize major points. (.001)	S	2.5	5.6	11.8	43.2	36.9
			F	.0	.6	8.3	56.2	34.9
42	41*	Instructors compare and contrast the implications of various theories. (.001)	S	1.0	3.6	17.8	49.3	28.4
			F	.0	.3	8.3	62.5	28.9
43	52*	Special "group help sessions" are provided for students needing them. (.001)	S	2.4	4.6	16.3	43.8	32.9
			F	.0	.9	19.4	54.6	25.0
44	38*	Instructors discuss recent developments in their field of specialization. (.001)	S	1.5	3.7	20.3	43.4	31.1
			F	.0	.9	13.5	48.3	37.2
45	27*	Instructors regularly seek feedback from students about the courses they teach and their teaching. (.001)	S	1.6	4.1	19.7	44.4	30.1
			F	.6	.3	6.2	48.0	44.9

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TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
46	42*	Instructors utilize students' personal interests in instructional situations. (.001)[4]	S[3]	1.4	4.4	18.6	47.6	28.0
			F	.3	2.8	8.6	55.7	32.6
47	50*	Instructors are congenial with their colleagues. (.001)	S	.9	1.5	28.3	39.3	29.9
			F	.3	.6	18.8	52.5	27.8
48	31*	Examinations and other course requirements are worthwhile and reasonable in their expectations. (.001)	S	3.1	5.9	16.9	43.5	30.6
			F	.0	.6	5.9	53.3	40.2
49*	55	There is much opportunity for free reading and study of topics of students' own choice in the courses offered. (.001)	S	2.3	4.6	22.1	42.3	28.7
			F	.9	4.3	25.0	51.9	17.9
50*	54	Instructors do original and creative work themselves. (.05)	S	1.3	3.9	26.1	42.1	26.6
			F	.0	2.5	32.3	41.2	24.0
51	43*	Students are encouraged to work independently. (.001)	S	1.7	6.6	22.2	42.6	26.9
			F	.0	2.5	14.5	46.2	36.9
52	44*	Excellence of teaching is of primary importance to the community college in determining salary increases, promotion, and tenure for faculty. (.001)	S	3.4	4.5	28.4	35.2	28.5
			F	1.5	2.8	14.2	42.0	39.5

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
53	9*	Instructors are conscientious in keeping appointments with students or in meeting their classes. (.001)[4]	S[3]	11.4	12.5	9.4	21.3	45.4
			F	2.5	4.7	1.2	22.0	69.6
54	57*	Students are permitted to proceed at their own rate, completing a course in a shorter period if they wish, or taking longer as necessary. (.001)	S	5.3	10.4	19.9	31.2	33.2
			F	3.1	6.2	24.6	40.0	26.2
55	49*	Instructors frequently invite criticism of their own ideas. (.02)	S	5.8	12.4	16.7	32.9	32.9
			F	1.9	5.0	10.5	48.9	33.7
56*	61	Students have opportunity to contract and work for given grades, such as A, B, or C by doing the quantity and quality of work specifically prescribed as a fixed standard for such grades. (.001)	S	5.8	8.1	21.4	37.3	27.4
			F	4.0	7.1	34.2	40.3	14.5
57*	65	Instructors are sought by colleagues for advice on research and publication. (.001)	S	2.5	5.1	40.8	34.6	17.0
			F	3.1	8.0	57.2	23.1	8.6
58	59*	Members of ethnic minority groups are employed as faculty members, administrators, and counselors. (.001)	S	4.3	5.9	42.1	27.5	20.2
			F	1.2	2.5	42.2	39.1	15.1

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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TABLE I (Continued)

S/R[1]	R/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
59*	63	Students may elect to take a number of courses on a pass-fail or pass-no pass option. (.001)[4]	S[3]	6.9	10.0	29.1	31.4	22.6
			F	5.0	14.2	37.5	31.6	11.8
60	56*	Students in classes do not necessarily have to perform at the same academic levels nor progress at the same rate. (.001)	S	6.4	15.4	22.0	32.3	23.8
			F	1.9	8.7	19.3	47.4	22.7
61	58*	Instructors are knowledgeable in fields other than their own. (.001)	S	4.7	11.6	29.5	36.9	17.3
			F	.3	7.4	22.9	51.4	18.0
62	62*	There are many small classes enrolling no more than 8-10 students. (.001)	S	6.2	12.2	32.2	27.7	21.6
			F	1.2	13.5	36.9	31.1	17.2
63	60*	Instructors are involved in non-academic campus activities that affect students. (.001)	S	6.4	11.2	40.6	26.1	15.7
			F	.9	4.9	38.3	43.2	12.7
64*	66	Lectures follow textbooks very closely. (.001)	S	5.9	15.8	33.9	28.5	16.0
			F	9.9	23.5	48.6	15.8	2.2
65	53*	High standards of performance are required of students. (.001)	S	6.1	16.8	32.4	35.2	9.5
			F	.3	3.7	16.3	58.2	21.5
66	64*	Instructors provide much public service to agencies and people off-campus. (.02)	S	5.5	9.8	54.9	19.6	10.3
			F	2.8	8.3	53.7	26.5	8.6

[1] S/R = student rank. F/R = faculty rank. Both are based on mean scores. (See Table II for means of selected attributes.) Attributes appear in the table in order of S/R. The asterisk with the ranks identifies the higher of the two means.

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TABLE I (Continued)

S/R[1]	F/R[1]	Attributes		Percentage Distribution of Responses[2]				
				1	2	3	4	5
67*	68	Instructors maintain a measure of aloofness in their relationships with students. (.001)[4]	S[3]	20.5	24.5	24.7	21.2	9.1
			F	26.9	34.6	23.5	12.7	2.5
68*	67	Courses are generally required rather than being elective. (.001)	S	17.9	31.8	24.4	17.1	8.8
			F	7.7	36.2	40.6	12.7	2.8
69*	69	Instructors do their own work independently of others and rarely discuss their courses or teaching with colleagues. (.001)	S	19.3	30.3	33.3	11.6	5.5
			F	29.6	49.5	17.4	3.1	.3
70*	70	Some large classes enroll more than 100 students. (.001)	S	46.5	25.9	15.1	7.8	4.7
			F	41.9	38.5	14.9	3.7	.9

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Looking Beyond the Data. Some courses, by their very nature, may require certain conditions (for example, the comparison and contrast of the implications of various theories), whereas student and faculty respondents did not rate this attribute relatively high. This condition suggests, again, the need for common sense in using student and faculty perceptions to describe or to assess an instructional climate. Attention to learning theory, such as the propositions cited in Section I, may assist in avoiding the pitfalls of depending solely on student and/or faculty desires.

Comparison of scores on attributes in the light of past student and faculty experience may assist in interpreting the data in Table I and in determining implications. For example, self-paced learning (S/R No. 54), contract grading (S/R No. 56), and pass-fail grading (S/R No. 59) have only relatively infrequently been experienced by either students or faculty. This condition undoubtedly influences responses. Here again, the need for looking beyond data for underlying reasons becomes apparent. The great difference between students and faculty regarding conscientiousness of

instructors (S/R No. 53 and F/R No. 9) further illustrates the need for probing in local situations. As new ideas are developed it is to be expected that unfamiliarity with them, however sound they may prove to be later, may lead to initial rejection. Patient persistence and wise leadership are required if sound innovation is not to be stifled in such situations.

The data in Table I are useful in describing an effective instructional climate as perceived by students and faculty. However, further treatment of responses to ascertain the relatedness of attributes offers a more penetrating analysis. In undertaking such analysis, it was considered important to determine if relationships existed among attributes such that they might be grouped or clustered. Should this relationship exist, the cluster titles could afford a somewhat less detailed but still definitive picture of an effective instructional climate. This grouping, together with associated statistical data, would also provide bases for selecting attributes in such a manner that attention to fewer than 70 attributes might still yield an effective climate. In other words, the clustering would provide additional insight into the significance of attributes, both singly and collectively.

The Clustering of Attributes

Factor analysis was employed to aid in developing clusters of attributes which related to the same larger characteristics of an effective instructional climate. Clusters as derived and factor loadings were dependent largely upon an oblique factor structure matrix after rotation with Kaiser normalization, plus some logical considerations. Four major clusters were established as follows, the first having subdivisions as indicated:

Instructional Management IM		26 attributes
Instructor's Preparation	(3 attributes)	
Planning and Organization	(8 attributes)	
Presentation	(10 attributes)	
Assessment and Outcomes	(5 attributes)	
Student Learning Obligations SLO		4 attributes
Instructor-Student Interpersonal Relations ISIR		7 attributes
Supplemental Instructional Provisions SIP		4 attributes
	Total	41 attributes

These clusters were established with primary reference to student responses. While faculty responses agreed in terms of some clustering, primary attention to their responses would have modified the cluster composition somewhat. Thus the clusters submitted for Scott scalescore and scale analysis and reported in Table II are based on student perception. The same analytical process was employed to yield statistical data based on faculty responses, the latter also being reported here.

Reliabilities and Intercorrelations. The application of Scott scalescore and scale analysis to these four clusters yielded the following reliability and intercorrelation figures, the former appearing in parentheses:

Students

	IM	SLO	ISIR	SIP
Instructional Management IM	(.929)	.578	.696	.687
Student Learning Obligations SLO		(.553)	.428	.412
Instructor-Student Interpersonal Relations ISIR			(.711)	.549
Supplemental Instructional Provisions SIP				(.613)

Faculty

	IM	SLO	ISIR	SIP
Instructional Management IM	(.914)	.570	.666	.683
Student Learning Obligations SLO		(.608)	.512	.454
Instructor-Student Interpersonal Relations ISIR			(.655)	.495
Supplemental Instructional Provisions SIP				(.617)

As might have been suspected, the cluster of 26 attributes dealing with Instructional Management emerged with the highest reliability. This development supported the proposal to consider sub-divisions within the total cluster, and some further analysis of this step is presented later. The relatively high intercorrelations among clusters suggest a unity or integrity of instructional climate which, in terms of student and faculty perceptions, does not yield the clear-cut discreetness or disparity among clusters that one might wish. Although not studied further in this project, it may be that students and faculty members tend to perceive instructional climate as a general composite and that in reacting to specific attributes presented for their consideration, differentiation is not easily accomplished. A further hint of this unity was evident in the factor analysis, particularly with respect to some attributes and their factor loadings. The relatively slight difference among mean scores as registered by students for many attributes speaks to this same unity. This condition obtains also with faculty members. These conditions do not negate the value of using student and faculty perceptions as clusters, but they do call for careful judgment in their use and interpretation.

By separating out the sub-divisions proposed within the large cluster of attributes constituting Instructional Management and applying Scott scalescore and scale analysis, another set of reliabilities and intercorrelations was obtained for each respondent group:

Students

	IP	PO	P	AO	SLO	ISIR	SIP
Instructor's Preparation IP	(.699)	.667	.722	.612	.410	.562	.594
Planning and Organization PO		(.804)	.827	.690	.586	.614	.623
Presentation P			(.856)	.714	.555	.658	.641
Assessment and Outcomes AO				(.658)	.425	.627	.585
Student Learning Obligations SLO					(.553)	.428	.412
Instructor-Student Interpersonal Relations ISIR						(.711)	.549
Supplemental Instructional Provisions SIP							(.613)

Faculty

	IP	PO	P	AO	SLO	ISIR	SIP
Instructor's Preparation IP	(.568)	.556	.646	.529	.349	.490	.518
Planning and Organization PO		(.780)	.795	.685	.559	.618	.662
Presentation P			(.815)	.633	.545	.588	.615
Assessment and Outcomes AO				(.710)	.427	.578	.530
Student Learning Obligations SLO					(.608)	.512	.454
Instructor-Student Interpersonal Relations ISIR						(.655)	.495
Supplemental Instructional Provisions SIP							(.617)

The relatively high intercorrelations persist, even when more clusters are formed, the unity or integrity of instructional climate remaining apparent. To a degree, which was not tested further, there appears to be one large cluster dealing with instructors as they are involved in the management of instruction and in relationships with students, and a smaller cluster dealing with the student and conditions relating to his involvement in the instructional climate. This observation needs added verification.

These sets of figures together with the data in Table II provide additional direction to those who wish to select attributes for describing and assessing instructional climate. In so doing, the interrelationships among clusters should not be forgotten. Attention to learning propositions, as suggested earlier, also will be of help in making a selection which considers other factors in addition to student and faculty perceptions as revealed in this study.

Clusters and Their Composition. The data in Table II summarize the makeup of the four major clusters of attributes characterizing an effective instructional climate.

Only 41 of the original 71 attributes are included as being of major value for the descriptive and assessment purposes central to this report. For each attribute included, mean scores, ranks and factor loadings are provided. A factor loading of .40 or higher is considered as quite adequate as a basis of selecting attributes for use in describing and assessing instructional climate. Together with the other comparative figures, these factor loadings are very helpful in developing an abbreviated description or assessment instrument. Cluster means are also provided, including figures for sub-divisions under Instructional Management.

As might be expected from the data in Table I, the cluster referred to as Instructional Management is central to the teaching-learning environment. The sub-divisions were developed as logical breakdowns to which attention would assure consideration of the broad scope of instructional management. Without these sub-divisions one might, in using mean scores, ranks, and/or factor loadings, concentrate too much on some one or two aspects of instructional management in describing and assessing instructional climate.

It should be noted that both students and faculty rated each of the 41 attributes as making at least a "significant" contribution to an effective instructional climate (i.e., mean scores above 3.500). Actually, most such attributes had mean scores of greater than 4.000 on a five-point scale. Most attributes have student factor loadings of .40 or greater, but fewer such high loadings appear for the faculty. In many instances student and faculty mean scores are comparably high and factor loadings are quite adequate, so that, in the main, the data in Table II should prove to be useful as indicated in Section I.

Student-Faculty Variables and Implications

Attention is directed here to personal variables and their interaction with student and faculty perceptions of an effective instructional climate. The major implication of this aspect of the study is that in any given classroom setting the instructor may wisely expect a variety of perceptions about instructional climate which it will be worth his while to explore in advance, as already recommended. For example, female students are frequently less conservative than males in their determination of attribute significance; vocational students may attach more importance to certain outcomes than do transfer students; and part-time students may view instructor performance somewhat differently than full-time students. It is useful for an instructor to know his local situation.

These variations do not invalidate the definition and assessment of instructional climate, but they do highlight the subjective human element involved. They suggest care in what one does and a realization that no one climate will satisfy all equally well—students or faculty. Both art and science seem to be involved in the instructional process. This condition, at least at the present time, complicates both the definition and assessment process. Such complication, however, should not be employed as an excuse for neither defining nor assessing.

A few details of variables and their interaction with responses follow in this section.

TABLE II

CLUSTERS OF ATTRIBUTES MAKING A SIGNIFICANT CONTRIBUTION TO AN EFFECTIVE INSTRUCTIONAL CLIMATE

S/R[1]	F/R[1]	Attribute by Clusters	SFL[2]	FFL[2]
		INSTRUCTIONAL MANAGEMENT (4.334/4.420)		
		Instructor's Preparation (4.457/4.653)[3]		
3	7	Instructors know their field of specialization very well. (4.505/4.560)[4]	.47	.53
5	2	Instructors are well-prepared for their classes. (4.456/4.728)	.55	.67
8	3	Instructors are enthusiastic about their courses. (4.431/4.683)	.45	.30
		Planning and Organization (4.184/4.355)		
6	15	Courses are credible, meaningful, relevant, and useful. (4.454/4.474)	.61	.55
20	22	Courses utilize well-written, appropriate, and interesting books and related reference material. (4.284/4.422)	.65	.48
24	11	Courses are well-organized with clearly specified objectives, assignments, requirements, and related learning aids. (4.262/4.498)	.62	.57
27	8	Remedial or developmental instruction in basic skills, such as reading, writing, mathematics, and speech is readily available to those needing it. (4.251/4.537)	.40	.49
28	16	Lectures, laboratory experiences, recitations, readings, and related teaching-learning endeavor are well-coordinated. (4.235/4.471)	.44	.56

[1] S/R = student rank based on mean scores.
F/R = faculty rank based on mean scores.

[2] SFL = student factor loading.
FFL = faculty factor loading.

[3] (Student cluster and sub-cluster mean scores/Faculty cluster and sub-cluster mean scores.)

[4] (Student mean score for attribute/Faculty mean score for attribute.)

TABLE II (Continued)

S/R[1]	F/R[1]	Attribute by Clusters	SFL[2]	FFL[2]
38	36	Instructors utilize concepts and facts from related fields. (4.096/4.255)	.41	.31
43	52	Special "group help sessions" are provided for students needing them. (4.002/4.037)[4]	.37	.25
46	42	Instructors utilize students' personal interests in instructional situations. (3.962/4.175)	.37	.20
Presentation (4.299/4.423)[3]				
1	1	Instructors are sincerely interested in students and respect them as individuals. (4.539/4.735)	.47	.46
2	5	Instructors know how to teach as well as what to teach. (4.511/4.645)	.70	.69
11	18	Instructors speak clearly and can easily be heard. (4.400/4.465)	.66	.66
12	6	Instructors explain clearly and are easy to understand and follow. (4.379/4.563)	.68	.71
14	19	Instructors present other points of view, as well as their own. (4.347/4.460)	.37	.41
15	20	A well-balanced variety of instructional techniques is used by instructors including such things as audio-visual aids, case studies, field trips, and resource personnel, as appropriate to the given course. (4.330/4.443)	.37	.37
19	32	Instructors have an interesting style of classroom presentation. (4.288/4.323)	.43	.42
32	34	Instructors are careful and precise in answering questions. (4.166/4.295)	.60	.54

[1] S/R = student rank based on mean scores.
F/R = faculty rank based on mean scores.

[2] SFL = student factor loading.
FFL = faculty factor loading.

[3] (Student cluster and sub-cluster mean scores/Faculty cluster and sub-cluster mean scores.)

[4] (Student mean score for attribute/Faculty mean score for attribute.)

TABLE II (Continued)

S/R[1]	F/R[1]	Attribute by Clusters	SFL[2]	FFL[2]
35	45	Instructors clarify thinking by giving reasons for their questions. (4.133/4.145)[4]	.46	.25
42	41	Instructors compare and contrast the implications of various theories. (4.006/4.200)	.51	.21
Assessment and Outcomes (4.236/4.375)[3]				
7	12	Students are learning something important in the courses they take. (4.433/4.488)	.39	.26
13	26	Students are attaining some of the personal objectives which they had in mind in selecting the courses they take. (4.354/4.370)	.57	.50
17	25	Examinations and other written assignments are returned promptly to students and discussed with them. (4.308/4.388)	.42	.49
29	24	Marking and grading are clearly explained and accomplished fairly and impartially. (4.228/4.404)	.39	.56
35	45	Examinations and other course requirements are worthwhile and reasonable in their expectations. (4.133/4.145)	.55	.47
		STUDENT LEARNING OBLIGATIONS (4.002/4.120)		
30	40	Classroom procedures include much free and open discussion. (4.188/4.201)	.41	.69
39	33	Students assume much personal responsibility for their learning. (4.078/4.311)	.58	.39
49	55	There is much opportunity for free reading and study of topics of students' own choice in the courses offered. (3.905/3.815)	.42	.38

[1] S/R = student rank based on mean scores.
F/R = faculty rank based on mean scores.

[2] SFL = student factor loading.
FFL = faculty factor loading.

[3] (Student cluster and sub-cluster mean scores/Faculty cluster and sub-cluster mean scores.)

[4] (Student mean score for attribute/Faculty mean score for attribute.)

TABLE II (Continued)

S/R[1]	F/R[1]	Attribute by Clusters	SFL[2]	FFL[2]
51	43	Students are encouraged to work independently. (3.864/4.175)[4]	.65	.25
		INSTRUCTOR-STUDENT INTERPERSONAL RELATIONS (4.211/4.408)		
10	4	Instructors are dynamic and energetic. (4.405/4.658)	.46	.37
18	29	Instructors are personable and have a sense of humor. (4.304/4.351)	.41	.45
25	14	Instructors realize when students are bored or confused. (4.258/4.483)	.55	.38
26	51	Many elective courses are available to students. (4.255/4.040)	.52	.22
31	10	Instructors regularly inform students of their progress and performance, and they reinforce student learning. (4.168/4.498)	.51	.30
34	17	Students are actively involved in the instructional process; they are not merely listeners. (4.147/4.471)	.58	.52
45	27	Instructors regularly seek feedback from students about the courses they teach and their teaching. (3.973/4.363)	.63	.11
		SUPPLEMENTAL INSTRUCTIONAL PROVISIONS (4.358/4.397)		
4	23	Library and other materials are provided in sufficient quantities and are readily available to students. (4.457/4.422)	.61	.44
9	30	Special academic and related counseling are available to students who need it. (4.413/4.351)	.41	.55

[1] S/R = student rank based on mean scores.
F/R = faculty rank based on mean scores.

[2] SFL = student factor loading.
FFL = faculty factor loading.

[4] (Student mean score for attribute/Faculty mean score for attribute.)

TABLE II (Continued)

S/R[1]	F/R[1]	Attribute by Clusters	SFL[2]	FFL[2]
16	13	Classrooms and laboratories are adequate for instruction, well-equipped, and free of outside distractions. (4.324/4.488)[4]	.65	.19
22	28	Instructors are readily available to students out of class. (4.274/4.358)	.31	.35

[1] S/R = student rank based on mean scores.
F/R = faculty rank based on mean scores.

[2] SFL = student factor loading.
FFL = faculty factor loading.

[4] (Student mean score for attribute/Faculty mean score for attribute.)

Response Interaction with Student Variables

A number of student variables were considered in an effort to determine if they interacted with the responses made to the attributes of an effective instructional climate. This consideration gave attention to the percentage distribution of responses and chi-square was used to determine interaction significant at the .05 or higher level of confidence. A brief report follows for each variable that was included.

Size of Institution. Three enrollment categories were used in considering this variable: less than 500, 500 through 1,999, and 2,000 or more. Except for ten attributes, the differences in size distribution of the responding institution were not significant at the .05 or higher level. Of these ten, only five were among the most significant attributes listed in Table II. Students in the smallest category of institution placed somewhat higher value on involvement in the instructional process, smaller classes, and the participation of instructors in non-academic activities which influence students. This condition seems to reflect what might logically be expected. Students in the largest institutional category suggested somewhat greater value for instructors who explain clearly and are easy to follow and who know how to teach as well as what to teach; they also valued somewhat higher the clear explanation of marking and grading and the prompt return and discussion of exams and other written work. The increased difficulty of personalizing instruction in larger institutions may, in some measure, relate to these responses.

Credits Completed. Responding students were placed in two groups on the basis of the number of credits completed: (1) fewer than 28, (2) 28 or more credits. This variable interacted significantly with responses to ten attributes of which only two are found in Table II. In general, students having completed fewer than 28 credits place a somewhat higher value on student choices and freedom, along with tutorial and group help.

Current Enrollment Status. Students enrolled for twelve or more credit hours made up one group, while those enrolled for fewer than twelve credit hours constitute the other group. Only two attributes were involved in significant interaction, no one of which is found among the more valuable characteristics of instructional climate as listed in Table II. Neither of the differences seems to be of pertinence to this report.

Future Educational Plans. Somewhat more than two-thirds of the responding students said they planned to attend a four-year college or university, the remainder presently having no such plans. Twelve attributes were involved in interaction on this variable, of which nine were interpreted as having any possible substantive significance. Of these nine only three are found in Table II. While students not planning attendance at a four-year institution placed somewhat greater value on well-organized courses, those students going on to four-year institutions placed somewhat higher value on broadly knowledgeable instructors, use of a variety of instructional techniques, small classes and friendly instructors who are self-critical but not aloof.

Age. Responses to 23 attributes appeared to interact significantly with the variable of age, but interpretation of this condition was quite difficult. Of these 23 attributes, ten are among the important ones as presented in Table II. With students well-distributed across age groups from those less than 18 years of age to those more than age 29, the most important observation to be made is that heterogeneity in age probably deserves much attention in terms of courses and instructional endeavor, each institution seeking to deal effectively with its own population. Older students (particularly those age 27 and older) placed greater significance than other students on such things as regular feedback from instructors, learning something important, frequent summarization by instructors, counseling, well-prepared instructors, well-organized courses using well-written materials, and greater instructional structure in general.

Sex. This variable interacted with responses to 37 attributes at the .05 or higher level of confidence, the most noticeable condition being that females tended to report a higher level of overall significance than did males. Of these attributes, 27 are to be found in Table II. In many cases the difference in levels of significance between females and males was substantively slight, although statistically significant.

Highest Level of Formal Schooling Completed. Only 48 students not having graduated from high school were among the respondents. The great majority reported such graduation as the highest level attained, and substantial numbers indicated post-secondary school study, a two-year A.A. degree or four-year college attendance. Very few reported the B.A. degree or graduate degrees. This variable interacted significantly with responses to six attributes of which only two are in Table II. Those having more formal schooling, especially those having attended four-year institutions or gone beyond them, placed higher overall significance on instructors seeking feedback from students, thought-provoking questions, varying points of view, the use of concepts and facts from related fields and lectures which complement texts.

Cultural Membership. The great majority of the responding students were White. A total of 222 belonged to minority cultures as follows: American Indian—48; Black—104; Chicano—42; other non-White—28. These small numbers may well have influenced the results. A total of 44 attributes was involved in statistically significant interactions with this variable, of which 20 are to be found in Table II. Just what

the differences mean is very difficult to say, but several observations may be pertinent. On 23 of the 44 attributes, White students registered higher overall significance than did other students. On 8 of the 44, higher significance was indicated by other non-White students (possibly Orientals, for the most part).

These results, plus those from another similar study, suggest that members of cultures having longer experience with higher education are somewhat more certain of what they expect and more accustomed to what has, for the most part, been developed to care for their cultural group. Members of cultures having had less experience with situations not primarily responsive to them are, quite understandably, less certain in their perceptions.

Except for indicating higher significance for the employment of minority members, the non-White student respondents did not generally subscribe as strongly as might be expected to such attributes as the provision of group help sessions, individual tutorial assistance, remedial and developmental instruction, self-paced learning and other attributes which contribute to individualized instruction. Community junior colleges may want to look into these conditions, particularly as they may influence the success or failure of special provisions made to assist educationally disadvantaged students—regardless of cultural membership.

Study Area of Principal Interest. The student's principal area of interest interacted significantly with responses to 19 attributes, of which eight are found in Table II. Although statistically significant, differences were generally small. Students who were undecided as to a major interest seemed to be somewhat less concerned with instructor preparation, attainment of personal objectives, receiving feedback, and individual tutorial help, but gave somewhat higher significance than other students to group help sessions. Liberal arts students gave higher significance than did others to personal student responsibility for learning and broadly knowledgeable instructors who are readily available. Vo-Tech students seemed to favor structure and clear explanations somewhat more than did other groups. The definiteness of a student's purposes and goals and the degree of his commitment seem to influence his posture toward instructional climate.

Grade Point Average. Students' estimated grade-point averages interacted with responses to 58 attributes, most of the differences being statistically significant at the .001 or higher level. Of these 58 attributes, 37 are found in Table II. By far the most prevalent response pattern was one in which students having the highest estimated grade-point average registered the highest overall significance for the attributes, while those having the lowest estimated grade-point average registered the lowest overall significance; this progression tended to be consistent, but not without exception, throughout the middle grade ranges.

The high level of confidence for the differences suggests that this variable is worthy of further study. The results also raise a very important question—Do those who succeed academically (in terms of grades) come to have more confidence in the nature of the educational environment while those who do less well develop less confidence? This possible relationship suggests that individual community junior colleges may wisely study their local situation.

It may be that the type of instructional climate generally provided serves reasonably well those students whose adjustment to it permits them to succeed, at

least not to fail so badly as to be dismissed or to drop out. But does this climate foster optimal success and satisfaction or does it encourage people to settle for less? What does the continuation of a climate in which some or many do not do very well say to these students, i.e., what is the message it may convey to them without words?

General Satisfaction with Instructional Climate. Students were asked to indicate the level of general satisfaction with the overall instructional climate of the institutions they were attending. The results were as follows:

Highly satisfied	15.5%
Satisfied	32.6%
Uncertain	31.7%
Dissatisfied	17.3%
Highly dissatisfied	1.8%
No response	1.2%

These figures, plus those which other studies have revealed, point up the need for individual community junior colleges to study their own situations periodically.

This variable of general satisfaction-dissatisfaction interacted with responses to 43 attributes, of which 28 are listed in Table II. The most prevalent pattern (39 cases) was for the more highly satisfied students to register greater significance for attributes than did the uncertain and dissatisfied students. This variable may well be studied in relation to grade-point averages as mentioned earlier; the interaction patterns appear to be much the same.

If general overall satisfaction, grade-point average and posture toward instructional climate do in fact interact as seems to be evident, this interrelationship may have great significance for the promotion of scholastic success and personal satisfaction.

Response Interaction with Faculty Variables

As with students, a number of faculty variables were considered in the light of possible interaction with responses to attributes. A report on these follows.

Size of Institution. With faculty, the size of institution appeared to interact significantly with responses to only six attributes of which one is found in Table II. The patterns of differences were mixed and substantive interpretation is very difficult. In general, faculty members in the two categories of larger institutions were in closer agreement, those faculty members of the smaller institutions tending to differ from the other two groups. One interesting contrast was that the respondents of the smaller institutions registered less significance to preparedness on the part of instructors and greater significance to public service than was true for the other faculty members. All groups indicated greater significance for instructor preparedness than for public service, however.

Number of Community College Courses Completed. The number of college courses dealing specifically with the community college, as completed by faculty members, interacted significantly for twelve attributes, of which only one is among those in Table II. Responses were so mixed in five cases as to reveal no clear pattern of interaction. In general, faculty members with more such courses tended to favor

more highly than others a closer control of the instructional climate with somewhat less value associated with student choice and freedom. This condition possibly relates to the levels of formal schooling completed, for faculty members having higher degrees also seemed to favor somewhat more control and structure.

Age. Faculty members were well distributed by age, although several groups were small. Age appeared to interact significantly with responses to thirteen variables, but there was so little clarity of pattern that no clear-cut interpretation was possible.

Sex. Female faculty members tended to rate many attributes as having higher "total significance" than did males. This was true for 25 attributes, of which 21 are found in Table II. Most of the difference seems to lie in the higher percentage of females indicating that an attribute made a "very significant" contribution, this figure ranging from about 15 to 35 percent higher with them than with males. In general, therefore, it appears that female faculty members attach a higher level of significance than do males to many of the attributes which both groups believe to be valuable. This result is in general agreement with that pertaining to female students.

Major Teaching Area. Most of the faculty respondents were prepared to teach in the liberal arts and sciences, with substantial numbers indicating the business field or the vocational-technical field other than business. Only nine attributes were involved in significant interaction with the major teaching area, of which only four are included in Table II. In general, those persons majoring in the liberal arts and sciences and/or in vocational-technical fields other than business registered a somewhat higher "total significance" for those nine attributes than did the business majors.

Cultural Membership. The number of faculty respondents in cultural groups other than White was so small as to influence adversely the reliability of any interaction of this variable with responses. It does appear that faculty sub-cultural membership might interact with some attribute responses, but the patterns obtained with small numbers were inconsistent and inconclusive. It seems reasonable to suggest that minority group faculty members may well have somewhat different expectations of instructional climate, and that individual community junior colleges should take this condition into account as they work with such climate. Some indication of what might be expected may be evident in checking student responses reported earlier in this section.

Community College Experience. The number of years of community college experience seemed to have little interaction with responses to the attributes. Only in four cases was significant interaction noted and only one of these is in Table II. One tendency did seem apparent, namely, that those with greater experience (more than 13 years) were somewhat inclined to attach greater significance to more instructional structure.

Total Teaching Experience. The background of experience of community junior college faculty members varied a great deal. The largest group of respondents (165 persons) consisted of individuals having been involved in service at some combination of such institutions as community colleges, four-year colleges or universities, post-secondary schools, secondary schools, and elementary schools. Smaller numbers, frequently quite low, reported singular experiences at one of these levels. Because of very small and widely varying numbers, the reliability of differences in response is subject to question. Twenty-three attributes were involved in interaction with this

variable, but in view of the reliability problem and the frequent absence of any consistent pattern of differences, nothing substantive can be reported. It may be observed that the background of teachers doubtless influences their attitudes toward instructional climate, but this study did not delineate this condition.

Highest Level of Formal Schooling Completed. The largest group of faculty (248) was made up of persons who had completed the Master's degree. Three other much smaller groups reported completion of a sixth-year program, a doctorate degree, or the baccalaureate degree. Only a handful of respondents had not attained the baccalaureate status. Statistically, this variable interacted with responses to twenty attributes, of which only three are listed in Table II. Differences among the several groups having a number of faculty were generally minimal, the statistical significance coming largely from differences involving very small groups of fewer than five persons. For the most part, therefore, this variable should probably be disregarded, in as far as this study is concerned.

General Satisfaction with Instructional Climate. Faculty respondents indicated the following levels of general satisfaction with the overall instructional climate in the institutions where they were employed:

Highly satisfied	17.1%
Satisfied	53.4%
Uncertain	18.6%
Dissatisfied	9.3%
Highly dissatisfied	.9%
No response	.6%

In comparison with students, faculty members registered a much higher level of general satisfaction, although the percentages indicating uncertainty and dissatisfaction certainly warrant attention.

This variable interacted with responses to twenty-eight attributes, of which thirteen are given in Table II. In a number of cases the differences in response formed no consistent pattern that yielded reasonable interpretation. Faculty members registering satisfaction and high satisfaction registered relatively greater significance for elective courses, clear explanations of marking and grading, the discussion of recent developments by instructors, the prompt return and discussion of exams, and preparedness on the part of instructors, in comparison with dissatisfied faculty. On the other hand, the dissatisfied groups tended to give relatively higher significance to the encouragement of independent study, student responsibility for learning, and active student involvement, in addition to the adequacy of facilities for instruction, the presentation of varying points of view, instructors inviting criticism of their points of view, clear and understandable presentations and explanations, the clarification of thinking, and conscientious instruction. These conditions, along with others already reported, suggest the importance of faculty discussion of instructional climate. It is unwise to assume that general understanding and agreement exist.

Administrative Responsibility. Of the faculty respondents, 226 reported no regular administrative assignments, a total of 97 indicating part- or full-time administrative duties. This variable interacted with responses to only six attributes, of which only three are found in Table II. Full-time faculty suggested somewhat higher

significance for clear presentations and explanations, and the use of well-written, interesting and appropriate texts. Administrators registered somewhat greater significance for use of a well-balanced variety of instructional techniques.